

Slow-burn US begins to catch fire

US Focus | The US has steadily developed what is now among the world's leading solar markets. John Parnell explores how its conservative approach has allowed it to build a solid industry that will now prepare it for challenges that lie ahead

You may not immediately think of the land that brought us monster trucks, one gallon sodas and Las Vegas as an advocate of the conservative slow and steady approach to life.

The 'Hollywood' approach to developing a solar market is arguably the all-in, generous feed-in tariff (FIT) route taken in Europe. While establishing such measures at a federal level in the US would be near enough a political impossibility, no state has chosen to take that approach either.

California will almost certainly end the year with more than 8GW of installed capacity, just shy of half all of that in the US. But there is no sign of the violent boom and bust cycles that have categorised the development of solar in Europe's major markets.

"The US market deliberately played a 'slow and steady wins the race strategy,'" says Jigar Shah, founder of SunEdison and clean energy evangelist.

The end result is that Shah believes the US will be the largest source of end-demand for solar in the world in 2016.

"I believe that very strongly. Once that occurs I think that the reality of the global politics is that most emerging markets would rather copy the US than Europe," he claims.

"Our goal in the US was not to artificially inflate solar through FITs but to gently educate the banking sector on why they

should be investing in solar. That process probably took five years longer than the FIT strategy but my sense is that today we're seeing the product of this broad education that we were able to accomplish in the US."

Massaging this financial interest has been the gentle demand created by Renewable Portfolio Standards (RPS) that many states adopted to ensure a portion of their electricity came from clean energy sources. Nevada's 25% goal by 2020 included a stipulation that 6% of its power would come from solar. Oregon, Maryland and Colorado also included more modest sub-targets for solar.

"There's one big transition taking place in the utility-scale market and that's the transition from a totally RPS dominated demand landscape to one that is a lot more diverse," says Shayle Kann, senior vice president of GTM Research. "Historically, the reason California and to a lesser extent Arizona, Colorado, Nevada and New Mexico have dominated the utility market is because they had an RPS that mandated utilities to procure renewables and in some cases solar."

"What has changed now is that power purchase agreement (PPA) prices for utility-scale have got low enough that solar can compete in a variety of different geographic and conceptual locations without needing the extra boost of the RPS. FirstWind signed over 400MW of contracts recently in Utah,

which has no RPS to speak of. We've counted up over 3GW of utility-scale solar contracts signed in the last 12 months outside of the RPS standards."

Michael Barker, senior analyst at market research firm NPD Solarbuzz, agrees that the favourable economics are feeding the growth seen in the US market.

"Solar is competing with natural gas and this is opening a large swathe of the country that has not traditionally been strong in terms of PV deployment," he says. "Solar in the utility segment is being driven by strong project economics. PV power plants are being seen as strong long-term investments and that is leading to a lot more funding coming into the industry and investors looking to invest in or purchase these large-scale developments – especially those projects that are able to agree long-term PPAs."

With more capital investment, there is more growth, and Shah's observation about the importance of educating investors bears out.

Redrawing the map

With new drivers behind the industry, the distribution of projects is also set to change. The infographic overleaf compares installed capacities with current project pipelines. Some have ambitions far beyond their

The world's biggest market by 2016?

Analysts respond to Jigar Shah's prediction that the US will be the largest source of end demand for solar in 2016:

Adam James, GTM Research

We do expect the US to be the largest global market in 2016, exceeding China by a razor-thin margin. There are two aspects of this 2016 story that are indicative of the broader market. First, the global market is still very concentrated in a few key countries, with the US and China accounting for over 50% of the market in 2016. Second, the global market is still highly policy-dependent, as those top two markets are being primarily driven by incentives; in the US by developers installing projects ahead of the ITC deadline, and in China from the feed-in-tariffs driving the utility-scale and large commercial and industrial market.

Ash Sharma, IHS

In terms of annual (DC) installations we predict the US will install around 9.5GW in 2016, second place behind China. Of course China has the ability to surprise and change rapidly, but all indications are that government policy and support will only accelerate deployment in China rather than slow it. As such, I find it hard to see the US displacing China in 2016. In 2016 we predict a spike in demand, as developers rush to complete projects before the ITC falls to 10%. This is likely to cause a significant fall in US installations in 2017 (we expect by as much as 33%) and would see the US fall behind Japan and further behind China

Jigar on...

Yield cos

When you think about the US model, what we're doing is saying how to correctly price the risk of very small projects. Most people like the EIB, know how to underwrite billion dollar projects in Africa and India and other places, but they have a hard time underwriting 1,000 US\$1 million projects. That's what we have proven in the US. We've figured that through a yield co you can create a portfolio of those 1,000 US\$1 million projects.

The yield co has already been done in London as well and I think we'll see yield cos going public in Singapore and Mumbai and other stock markets around the world. There's certainly no lack of ability to replicate the model, the question is can you feed the beast? Once the US is the largest market in the world, people will have the confidence that you can find the projects to make this market work. You can't sustain the costs of structuring this model unless you have enough projects to invest in.

The future US market

Texas is a large state so you will always get large numbers out of Texas. It's the same with North Carolina. But I think you'll also get high penetration in Iowa, Utah and places like Georgia. Which I think is critical, it's not just about large numbers and flashy press. It's about whether utilities start viewing solar as a systemic way of managing the grid.

Utilities

Education is sometimes overrated. Jealousy is sometimes underrated. It's better to make someone jealous of you than to educate them. A lot of utilities in the US and around the world are jealous of our industry and that's causing some of them to try and join us and copy us which is wonderful news. It's a milestone for the industry.

The day is always darkest before the dawn. Right before you win, is when people are at their most vitriolic against you. The fact people are so animated about solar now gives me hope that we are actually winning.

President Obama's climate plans

All these things are valuable. Whether it's the International Energy Agency saying renewables are critical for meeting climate change goals or the UN saying renewable energy is essential to reduce costs in emerging markets. The more reasons we have the better. It's like that Gandhi quote: 'First they ignore you, then they ridicule you, then they fight you, and then you win.'



The ITC cut

I think the UK has led in this area. When the UK was faced with this existential threat of the FIT being cut nearly 50% it delayed it a year through the courts and then it responded within a year after that. The US market has two and a half years to figure out how to meet this target. The same is true in Germany and India. Many markets that have had these cuts in incentives have found that the solar industry was able to figure out how to make do in the new environment.

Trade

There has to be a global conversation about what it means to be fair in this space. The good thing about solar is that there is not that much profit in the manufacturing part of the business. I don't actually think China is getting such a good deal by exporting this stuff around the world. It does get the jobs. They're not that high paying jobs and I'm not sure they would all move to the US if there was a fair regime.

That said I don't think it is incumbent on the US to lead a conversation on how we create a framework so the private sector understands what rules we're operating under.

Technology

There's still a tremendous amount of technology innovation still to be deployed and there is a lot of optimism that solar will continue to go down in cost for the next six year. Its important to note that in the coal, gas and nuclear industry, they are all looking at inflation. None of them are looking at cost reduction.

new routes to finance for the major residential installers and the utility-scale developers alike. For the latter, yield cos have offered another string to the bow. Betting the farm on this as a source of solar salvation could be premature.

Shah points out that while yield cos could well emerge in a number of developing solar markets, the one problem with a yield co is that you need to ensure you continue to have sufficient projects

"There's certainly no lack of ability to replicate the model, the question is can you feed the beast? You can't sustain the costs of structuring this model unless you have enough projects to invest in," he says.

So would Dorazio's OCI look to follow in the footsteps of NRG Energy and fellow developer SunEdison and launch a yield co?

"We're a relatively new company and we don't have the megawatt base right now to push off the revenues we need to be a yield

co, but we have the growth story. It's too early for us. We're not ready for it so we're not studying it. We'll look at it again in two years," he says.

Dorazio explains that as well as sitting on a large volume of projects you also need to show you have the ability to continue to add to 50-100MW to that every year. He describes yield cos as "a bit of a craze" and expects the appetite for them to spike then wane.

"I think there will be more. I just don't know how many more. A lot of companies are even trying to create themselves as yield cos... they are almost becoming a financial instrument more than being backed by real, technical, asset-based companies," he says.

"I think some of the yield cos out already will falter. They won't be able to keep up with the growth and that will sour investors on the yield co. They will start to look harder at the company and the growth of the company to see if they have the track record to pull that

off. We'll see that in the next two years," he predicts, adding that he also expects smaller companies to then choose to shun yield cos because of the cost of running them. For this reason, Dorazio expects most to take "a conservative" approach to yield cos.

The future of US solar again looks to be founded on the slow and steady approach.

Tempering the yield co "craze" into just another sustainable source of financing for developers would show admirable restraint – the same restraint that has typified the slow and steady growth of solar in the US thus far. If the sector keeps going this slow and steady, it might just race ahead to the top of the tree and fulfil Jigar Shah's 2016 prediction. ■

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